Translation of Annex to the IPER

Claims

Sub. A'

1. An intelligent power module comprising
a power part the electronic components (1) of which are arranged on a power substrate (2), and
a logic part the components (3, 4) of which are arranged on a circuit board (5) having a recess (6) in which said power part is located and electrically connected to the logic part by means of wire bonding techniques (7),
said power substrate (2) being mounted on a cooling plate (8),
characterized in that said circuit board is mounted on the cooling plate in part only, namely only with portions of the circuit board surrounding the power substrate (2).

2. An intelligent power module according to claim 1, characterized in that at least a strip portion (9, 109) along a side of the circuit board (5) is left free and is not mounted on said cooling plate.

3. An intelligent power module according to claim 2, characterized in that the cooling plate (5) has contact pads (11) on said side by means of which the module can be soldered directly in the slot-like opening (12) of a system circuit board (13).

4. An intelligent power module according to claim 1, characterized in that the components (103, 104, 105, 106) of the logic part are arranged on a multilayer

Sub. A1 Concluded

circuit board (107, 108) having a recess (110) in which said power part is located and electrically connected to said logic part, and characterized in that the multilayer circuit board (107, 108) has a laminate structure of conductively coated layers whose carrier material consists of a glass fiber resin fabric each, and in that the multilayer circuit board consists of two parts (107, 108) connected by a thin intermediate section in which all lower layers of the multilayer circuit board (107, 108) are not present and only the component-side uppermost layer is present as a bendable continuation in the form of a flexible, electrical and mechanical connecting layer (109) between said two parts (107, 108).

5. An intelligent power module according to claim 4, characterized in that the flexible connecting layer (109) is bent by 180° so that said two parts (107, 108) continue in bendable manner.

6. An intelligent power module according to claim 5, characterized in that the first part (107) of the multilayer circuit board, which has the recess (110), as well as the second, folded up part (108) are approximately of equal size, that said first part (107) is mounted on a cooling plate (111) that is larger than the power substrate area, and in that the electrical connections (112) between said power substrate (102) and the first part (107) of the multilayer circuit board are established by means of wire bonding techniques (112).